

REPTILIA: SQUAMATA: CORYTOPHANIDAE

LAEMANCTUS LONGIPES

Catalogue of American Amphibians and Reptiles.

McCrane, J.R. and G. Köhler. 2004. *Laemantus longipes*.

***Laemantus longipes* Wiegmann**
Smooth Casqueheaded Basilisk, Cutete Policia

L. [aemantus]. longipes Wiegmann 1834:46. Type locality, "prope Jalapam" [Jalapa, Veracruz, México]. Holotype, Zoologische Museum, Museum für Naturkunde der Humboldt-Universität zu Berlin (ZMB) 494, an adult male, collected by F. Deppe and C.J.W. Schiede, between July and mid-November 1828 (examined by GK).

• **CONTENT.** Three subspecies are currently recognized: *L. l. longipes*, *L. l. deborrei*, and *L. l. waltersi*.

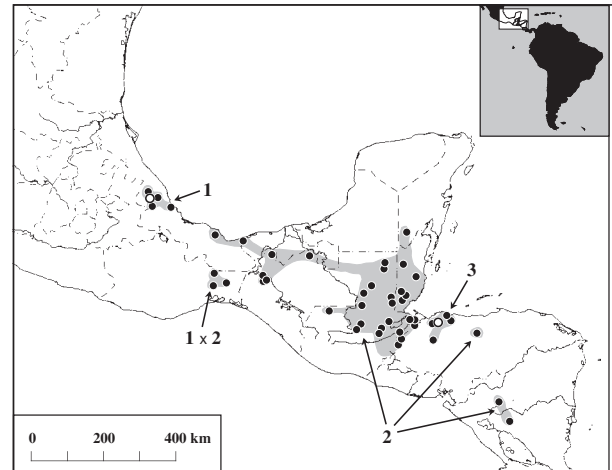
• **DEFINITION.** *Laemantus longipes* is a moderately large corytophanine (maximum recorded snout-vent length 150 mm; McCoy 1968, although see Boulenger 1885, who recorded a SVL of 190 mm for this species) with an extremely long tail (3–4 times longer than SVL), a laterally compressed body, and a unique flat-topped cephalic casque. The dorsal head scales are strongly rugose to slightly carinate and the anterior dorsal head scales are similar in size to nearly twice as large as the posterior ones. The posterior edge of the casque lacks a fringe of enlarged, flattened, triangular scales. Scales around the posterior edge of the casque (last superciliary to last superciliary) number 21–32. The nasal scale is single, the nostril is located more or less centrally in the scale, and the opening is directed posterolaterally. The gular fold varies from absent to complete, with 2–5 rows of small scales contained in the fold. The gular scales are keeled; each scale has one, two, or three keels. The dorsal body scales are large and keeled, with the middorsal scale row not enlarged and not forming a serrated dorsal crest. The ventral scales are large, strongly keeled, imbricate, and usually pointed posteriorly. Scales around the midbody number 31–59 (McCoy 1968, lower value our data). The subdigital scales have keratinized knobs on the anterior section of each scale. Caudal autotomy is absent. Femoral and preanal pores are absent.

The dorsal surfaces are green in life with about 4–7 dark green, brown, or pale green crossbars. The crossbars usually have dark brown anterior and posterior edging as they cross the middorsum. A narrow, interrupted white ventrolateral stripe extends from the level of the axillae to the groin.

• **DIAGNOSIS.** *Laemantus longipes* can be distinguished from *L. serratus* by lacking a projecting fringe of enlarged, erect, flattened, triangular scales on the posterior edge of the head casque and by lacking a serrated middorsal crest. The species differs from other members of the family Corytophanidae in having a flat-topped head casque.

• **DESCRIPTIONS.** Detailed descriptions are in Wiegmann (1834), Boulenger (1877), Smith (1944), McCoy (1968), Lang (1989a), Lee (1996, 2000), Campbell (1998), and Köhler (1999b).

• **ILLUSTRATIONS.** Color photographs are in Stolk (1979), Wynne (1981), Alvarez del Toro (1982), Obst et al. (1988), Villa et al. (1988), Stafford (1994), Lee (1996, 2000), Campbell (1998), Hartdegen (1998), Köhler (1999b, 2000, 2001, 2003), Stafford and Meyer (1999), Beyer (2001), and Stafford and Mallory (2002). Black and white photographs are in Neill (1961), Alvarez del Toro (1973), and Kort (1988). Wiegmann



MAP. Distribution of *Laemantus longipes*: circles denote type localities (the type locality of *L. l. deborrei* is too imprecise to plot) and dots represent other known localities (some dots denote two or more proximate localities). The populations from Oaxaca, México were considered by McCoy (1968) to be intergrades between *L. l. longipes* and *L. l. deborrei*.



FIGURE. Young adult female *Laemantus longipes* (USNM 549415) from between Laguna del Cerro and Quebrada Grande, Copán, Honduras (photograph by JRM).

(1834) provided a **color drawing** of the adult holotype (reproduced in black and white in the reprint edition) and Weber (1945) a **color painting** of a Mexican specimen. **Black and white drawings** are in Boulenger (1877, adult and dorsal surface of head casque), Reynolds (1913, shoulder girdle and sternum), McCoy (1968, dorsal surface of head casque), Wever (1978, cochlear region), Lang (1989a; hyoid, lateral view of skull, and posterior marginal teeth), Lee (1996, 2000, lateral surface of head), and Köhler (1999b, dorsal surface of head and casque).

• **DISTRIBUTION.** *Laemantus longipes* occurs at low and moderate elevations (near sea level to 1200 m) on the Atlantic versant from central Veracruz, México to central Nicaragua, avoiding the subhumid northern portion of the Yucatán Peninsula (see **Remarks**). The species also occurs on the Pacific versant of the Isthmus of Tehuantepec in east-central Oaxaca, México, and J.A. Campbell (in litt. 25 June 2001) has photographs "of an individual from Cerro Montecristi on the Guatemalan-El Salvador border that was found on a Pacific-flowing creek" in Guatemala.

• **FOSSIL RECORD.** None.

• **PERTINENT LITERATURE.** References are listed by topic: **literature reviews** (Smith and Smith 1976, 1993), **annotated**

synonymy (McCoy 1968), **hemipenis** (Böhme 1988, see **Remarks**), **subdigital scales** (Peterson 1983), **parietal eye** (Gundy and Wurst 1976), **microanatomy of scales** (Lang 1989b), **osteology** (Camp 1923, de Queiroz 1987, Lang 1989a), **dentition** (Olson et al. 1986, 1987), **reproduction** (Duellman 1963, McCoy 1968, Fitch 1970, McCarthy 1982, Blody 1983, Stafford 1994, Campbell 1998, Köhler 1999b, Beyer 2001, Stafford and Mallory 2002), **arterial system** (Zug 1971), **ear and hearing** (Wever 1978), **trunk nerves** (Renous-Lécuru and Jullien 1972a, b), **ulnar nerve course** (Jullien and Renous-Lécuru 1972), **phylogenetic relationships** (Schulte et al. 2003), **color change in captivity** (Vaillant 1896), **care in captivity** (Kort 1988, Hartdegen 1998, Beyer 2001), **longevity in captivity** (Snider and Bowler 1992), **predation** (Draheim 1995), and **conservation** (Wilson and McCranie 2004).

McCoy (1968) and Lang (1989a) provided **taxonomic reviews** and the latter a **phylogenetic analysis**. Comments on **biogeography** are in Stuart (1950), Savage (1966), Johnson (1989), Flores-Villela (1991), and Wilson and McCranie (1998).

The species is mentioned in **distribution notes**, **faunal lists**, or **keys**: Cope (1865, 1887), Boulenger (1885), Günther (1885), Ferrari-Perez (1886), Boettger (1893), Werner (1903), Atkinson (1907), Schmidt (1941), Smith (1944), Stuart (1948, 1958, 1963), Smith and Taylor (1950), Duellman (1963, 1965), McCoy (*in* Peters and Donoso-Barros 1970), Villa (1971), Meyer and Wilson (1973, *in part*; USNM 84026, 84550 are *L. serratus*), Henderson and Hoevers (1975), Johnson et al. (1977), Lee (1980, 1996, 2000), Alvarez del Toro (1982), Wilson (1983), Flores-Villela et al. (1987, 1995), Pérez-Higareda et al. (1987), Villa et al. (1988), Campbell and Vannini (1989), Mendelson (1990), Pelcastre Villafuerte and Flores-Villela (1992), Flores-Villela (1993), Stafford (1994), Wilson and McCranie (1994, 2002), da Silva and Sites (1995), Casas-Andreu et al. (1996), Muñoz et al. (1996), Ruiz-Pérez (1996), Vogt et al. (1997), Campbell (1998, 2001), Köhler (1999a,b, 2000, 2001, 2003), Stafford and Meyer (1999), Espinal et al. (2001), and Wilson et al. (2001).

• **REMARKS.** Duellman (1958) and McCoy (1968) rejected the Colima, México record of *Laemantus longipes* first reported by Gadow (1905). Böhme (1988) described the hemipenis of the species (as *L. deborrei*) based on specimens from “Costa Rica,” however *L. longipes* is unknown from that country.

The “*Laemantus longipes*” of A.M.C. Duméril and Duméril (1851), A.H.A. Duméril (1856), and Bocourt (*in* A.H.A. Duméril et al. 1870–1909) actually apply to *L. serratus*.

• **ETYMOLOGY.** The name *longipes* is from the Latin *longus* (long) and *pes* (foot), in reference to the long feet; *deborrei* is a patronym honoring Preudhomme de Borre, former curator of the IRSNB; and *waltersi* is a patronym honoring Leon L. Walters, who assisted K. Schmidt in the collection of the holotype.

• **COMMENT.** We prefer the name Smooth Casqueheaded Basilisk (Campbell 1998) over Eastern Casquehead Iguana (Liner 1994, Frank and Ramus 1995), although neither would be meaningful to people living in the geographical range of the species.

1. *Laemantus longipes longipes* Wiegmann

L. [aemantus]. longipes Wiegmann 1834:46. See species synonymy.

Laemantus longipes longipes: McCoy 1968:667. First use of trinomial.

• **DEFINITION.** The gular fold is complete, mean number of scales around midbody is 55 (50–59), and the maximum known SVL is 150 mm (McCoy 1968, but see Boulenger 1885).

2. *Laemantus longipes deborrei* Boulenger

Laemantus de Borrei Boulenger 1877:465. Type locality, “de Tabasco (Mexico).” Syntypes (2), Institut Royal des Sciences Naturelles de Belgique (IRSNB) 2003, 2004, adult males, collector unknown (purchased by a Mr. Linden), collection date unknown (entered into museum ledger 17 November 1857) (not examined by authors).

Laemantus longipes: Müller 1880:10.

Laemantus deborrei: Günther 1885:54. Unjustified emendation.

Laemantus deborrei: Cope 1887:33.

Laemantus deborrei: Schmidt 1928:6. *Lapsus*.

Laemantus deborrei: Alvarez del Toro 1960:201. *Lapsus* for generic name.

Laemantus longipes deborrei: McCoy 1968:668. First use of trinomial.

Laemantus longipes: Alvarez del Toro 1973:56. *Lapsus* for generic name.

Laemantus longipes deborrei: Alvarez del Toro 1973:167. *Lapsus* for generic name.

• **DEFINITION.** The gular fold is complete, mean number of scales around midbody is 43 (34–47), and the maximum known SVL is 143 mm (McCoy 1968).

3. *Laemantus longipes waltersi* Schmidt

Laemantus waltersi Schmidt 1933:20. Type locality, “from Lake Ticamaya, east of San Pedro, between the Chamelecon and Ulua Rivers, Honduras.” Holotype, Field Museum of Natural History, Chicago (FMNH) 5213, an adult female, collected by K.P. Schmidt and L.L. Walters, 20 April 1923 (examined by JRM).

Laemantus longipes waltersi: McCoy 1968:670. First use of trinomial.

• **DEFINITION.** The gular fold is absent or incomplete, mean number of scales around midbody is 33 (31–36), and the maximum known SVL is 124 mm.

• **ACKNOWLEDGMENTS.** H. Landsberg provided collecting data for the holotype and G. Lenglet data for the syntypes of *L. l. deborrei*. J.A. Campbell provided information about the species on the Pacific versant of Guatemala. H. Bringsoe, S.W. Gotte, and J.A. Poindexter provided copies of publications.

LITERATURE CITED

- Alvarez del Toro, M. 1960. Los Reptiles de Chiapas. Primera Edición. Inst. Cienc. y Artes de Chiapas, Tuxtla Gutiérrez.
- . 1973 (“1972”). Los Reptiles de Chiapas. Segunda Edición, Puesta al Dia y Aumentada. Tuxtla Gutiérrez, Chiapas.
- . 1982. Los Reptiles de Chiapas. Tercera Edición, corregida y aumentada. Publ. Inst. Hist. Nat., Tuxtla Gutiérrez, Chiapas.
- Atkinson, D.A. 1907. Notes on a collection of batrachians and reptiles from Central America. *Ohio Nat.* 7:151–157.
- Beyer, M. 2001. Haltung und Zucht von *Laemantus longipes* Wiegmann, 1834. *Iguana Rundschreiben* 14:7–11.
- Blody, D.A. 1983. *Laemantus longipes* (Casque-headed Lizard). *Reproduction*. *Herpetol. Rev.* 14:74.
- Boettger, O. 1893. Katalog der Reptilien-Sammlung im Museum der Senckenbergischen Naturforschenden Gesellschaft in Frankfurt am Main. I. Teil (Rhynchocephalen, Schildkröten, Krokodile, Eidechsen, Chamäleons). Gebrüder Knauer, Frankfurt.
- Böhme, W. 1988. Zur Genitalmorphologie der Sauria: funktionelle und stammesgeschichtliche Aspekte. *Bonner Zool. Monogr.* (27):1–176.
- Boulenger, G.A. 1877. Étude monographique du genre *Laemantus* et description d’une espèce nouvelle. *Bull. Soc. Zool. France* 2:460–

- 466, pl. VII.
- . 1885. Catalogue of the Lizards in the British Museum (Natural History). Vol. II. 2nd ed. Trustees of the British Museum, London.
- Camp, C.L. 1923. Classification of the lizards. *Bull. Amer. Mus. Nat. Hist.* 48:289–481.
- Campbell, J.A. 1998. Amphibians and Reptiles of Northern Guatemala, the Yucatán, and Belize. Univ. Oklahoma Press, Norman.
- . 2001. The herpetofauna of the mesic upland forests of the Sierra de Las Minas and Montañas del Mico of Guatemala, p. 80–92. *In* J.D. Johnson, R.G. Webb, and O.A. Flores-Villela (eds.), *Mesoamerican Herpetology: Systematics, Zoogeography, and Conservation*. Centennial Mus. Univ. Texas–El Paso, Spec. Publ. (1):iv + 200 p.
- and J.P. Vannini. 1989. Distribution of amphibians and reptiles in Guatemala and Belize. *Proc. West. Found. Vert. Zool.* 4:1–21.
- Casas-Andreu, G., F.R. Méndez-de-la-Cruz, and J.L. Camarillo. 1996. Anfíbios y reptiles de Oaxaca. Lista, distribución y conservación. *Acta Zool. Mexicana* (n. s.) 69:1–35.
- Cope, E.D. 1865. Third contribution to the herpetology of tropical America. *Proc. Acad. Nat. Sci. Philadelphia* 17:185–198.
- . 1887. Catalogue of batrachians and reptiles of Central America and Mexico. *Bull. U.S. Natl. Mus.* 32:1–98.
- da Silva, N.J., Jr. and J.W. Sites, Jr. 1995. Patterns of diversity of Neotropical squamate reptile species with emphasis on the Brazilian Amazon and the conservation potential of indigenous reserves. *Conserv. Biol.* 9:873–901.
- de Queiroz, K. 1987. Phylogenetic systematics of iguanine lizards. A comparative osteological study. *Univ. California Publ. Zool.* 118:1–203.
- Draheim, G.S. 1995. Breeding biology and habitat requirements of the White Hawk (*Leucopternis albicollis*) in Guatemala. Unpubl. M.S. Thesis, Boise St. Univ., Boise, Idaho.
- Duellman, W.E. 1958. A preliminary analysis of the herpetofauna of Colima, Mexico. *Occ. Pap. Mus. Zool. Univ. Michigan* (589):1–22.
- . 1963. Amphibians and reptiles of the rainforests of southern El Petén, Guatemala. *Univ. Kansas Publ. Mus. Nat. Hist.* 15:205–249, pls. 7–10.
- . 1965. Amphibians and reptiles from the Yucatan Peninsula, México. *Univ. Kansas Publ. Mus. Nat. Hist.* 15:577–614.
- Duméril, A.H.A. 1856. Description des reptiles nouveaux ou imparfaitement connus de la collection du Muséum d'Histoire Naturelle et remarques sur la classification et les caractères des reptiles. Deuxième mémoire. Troisième, quatrième et cinquième familles de l'ordre des sauriens (Geckotiens, Varaniens et Iguaniens). *Arch. Mus. Natl. Hist. Nat., Paris* 8:437–588, pls. 17–24.
- , M.-F. Bocourt, and F. Mocquard. 1870–1909. Études sur les Reptiles. Mission Scientifique au Mexique et dans l'Amérique Centrale. Recherches Zoologiques pour servir à l'Histoire de la Faune de l'Amérique Centrale et du Mexique. Troisième Partie.—1^{re} Section. Texte. Imprimerie Nationale, Paris.
- Duméril, A.M.C. and A.H.A. Duméril. 1851. Catalogue Méthodique de la Collection des Reptiles. *Mus. d'Hist. Nat. Paris*.
- Espinal, M.R., J.R. McCranie, and L.D. Wilson. 2001. The herpetofauna of Parque Nacional La Muralla, Honduras, p. 100–108. *In* J.D. Johnson, R.G. Webb, and O.A. Flores-Villela (eds.), *Mesoamerican Herpetology: Systematics, Zoogeography, and Conservation*. Centennial Mus. Univ. Texas–El Paso, Spec. Publ. (1):iv + 200 p.
- Ferrari-Perez, F. 1886. Catalogue of animals collected by the Geographical and Exploring Commission of the Republic of Mexico. *Proc. U.S. Natl. Mus.* 9:125–199.
- Fitch, H.S. 1970. Reproductive cycles in lizards and snakes. *Univ. Kansas Mus. Nat. Hist. Misc. Publ.* (52):1–247.
- Flores-Villela, O.A. 1991. Análisis de la Distribución de la Herpetofauna de México. Tesis Doc., Fac. Cienc., Univ. Nac. Autón. México, México, D.F.
- . 1993. Herpetofauna Mexicana. Lista anotada de las especies de anfibios y reptiles de México, cambios taxonómicos recientes, y nuevas especies. Annotated list of the species of amphibians and reptiles of Mexico, recent taxonomic changes, and new species. *Carnegie Mus. Nat. Hist. Spec. Publ.* (17):iv + 73 p.
- , G. Pérez Higadara [sic], R.C. Vogt, and M. Palma Muñoz. 1987. Claves para los generos y las especies de anfibios y reptiles de la región de los Tuxtlas. *Univ. Nac. Autón. México, México, D.F.*
- , F. Mendoza Quijano, and G. Gonzalez Porter (comp.). 1995. Recopilación de claves para la determinación de anfibios y reptiles de México. *Publ. Espec. Mus. Zool., Univ. Autón. México* 10:1–285.
- Frank, N. and E. Ramus. 1995. A Complete Guide to the Scientific and Common Names of Reptiles and Amphibians of the World. NG Publ., Inc., Pottsville, Pennsylvania.
- Gadow, H. 1905. The distribution of Mexican amphibians and reptiles. *Proc. Zool. Soc. London* 1905:191–244.
- Gundy, G.C. and G.Z. Wurst. 1976. The occurrence of parietal eyes in Recent Lacertilia (Reptilia). *J. Herpetol.* 10:113–121.
- Günther, A.C.L.G. 1885–1902. Reptilia and Batrachia, p. 33–56. *In* O. Salvin and F.D. Godman (eds.), *Biologia Centrali-Americana; or, Contributions to the Knowledge of the Fauna and Flora of Mexico and Central America*. R.H. Porter and Dulau & Co., London.
- Hartdegen, R. 1998. Cone-headed Lizards. *Rept. Amphib. Mag.* 56:42–47.
- Henderson, R.W. and L.G. Hoevers. 1975. A checklist and key to the amphibians and reptiles of Belize, Central America. *Milwaukee Pub. Mus. Contrib. Biol. Geol.* (5):1–63.
- Johnson, J.D. 1989. A biogeographic analysis of the herpetofauna of northwestern nuclear Central America. *Milwaukee Pub. Mus. Contrib. Biol. Geol.* (76):1–66.
- , C.A. Ely, and R.G. Webb. 1977 (“1976”). Biogeographical and taxonomic notes on some herpetozoa from the northern highlands of Chiapas, Mexico. *Trans. Kansas Acad. Sci.* 79:131–139.
- Jullien, R. and S. Renous-Lécuru. 1972. Variations du trajet du nerf ulnaire (*ulnaris*) et de l'innervation des muscles dorsaux de la jambe chez les lacertiliens (Reptiles, Squamates): valeur systématique et application phylogénique. *Bull. Mus. Hist. Nat., Paris, 3^e série, n° 29, Zool.* 23:207–246.
- Köhler, G. 1999a. The amphibians and reptiles of Nicaragua. A distributional checklist with keys. *Cour. Forschungsinst. Senckenberg* (213):1–121.
- . 1999b. Basilisken. Helmleguane und Kronenbasilisken. Lebensweise • Pflege • Zucht. 2., neu bearbeitete, stark erweiterte Auflage. Herpeton, Verlag Elke Köhler, Offenbach.
- . 2000. Reptilien und Amphibien Mittelamerikas. Band 1: Krokodile • Schildkröten • Echsen. Herpeton, Verlag Elke Köhler, Offenbach.
- . 2001. Anfíbios y Reptiles de Nicaragua. Herpeton, Verlag Elke Köhler, Offenbach.
- . 2003. Reptiles of Central America. Herpeton, Verlag Elke Köhler, Offenbach.
- Kort, J.K. 1988. De Helmkopleguaan (*Laemactis longipes*) in het terrarium. *Lacerta* 46:201–202.
- Lang, M. 1989a. Phylogenetic and biogeographic patterns of basiliscine iguanians (Reptilia: Squamata: “Iguanidae”). *Bonner Zool. Monogr.* (28):1–172.
- . 1989b. The morphology of the Oberhäutchen with the description and distribution of scale organs in basiliscine iguanians. *Amphib.-Rept.* 10:423–434.
- Lee, J.C. 1980. An ecogeographic analysis of the herpetofauna of the Yucatan Peninsula. *Univ. Kansas Mus. Nat. Hist. Misc. Publ.* (67):1–75.
- . 1996. The Amphibians and Reptiles of the Yucatán Peninsula. Cornell Univ. Press, Ithaca, New York.
- . 2000. A Field Guide to the Amphibians and Reptiles of the Maya World: the Lowlands of Mexico, Northern Guatemala, and Belize. Cornell Univ. Press, Ithaca, New York.
- Liner, E.A. 1994. Scientific and common names for the amphibians and reptiles of Mexico in English and Spanish. Nombres científicos y comunes en Inglés y Español de los anfibios y los reptiles de México. *SSAR Herpetol. Circ.* (23):v + 113 p.
- McCarthy, T.J. 1982. A note on the reproduction in *Laemactis longipes* in Belize (Sauria: Iguanidae). *Carib. J. Sci.* 18:133.
- McCoy, C.J. 1968. A review of the genus *Laemactis* (Reptilia: Iguanidae). *Copeia* 1968:665–678.
- Mendelson, J.R., III. 1990. Notas sobre una colección [sic] de anfibios y reptiles de Pueblo Viejo, Alta Verapaz, Guatemala. Notes on a collection of amphibians and reptiles from Pueblo Viejo, Alta Verapaz, Guatemala. *Fundac. Interamer. Investig. Trop. Publ. Ocas.* (3):1–18.
- Meyer, J.R. and L.D. Wilson. 1973. A distributional checklist of the turtles, crocodilians, and lizards of Honduras. *Contrib. Sci., Nat. Hist. Mus. Los Angeles Co.* (244):1–39.
- Müller, F. 1880. Erster Nachtrag zum Katalog de herpetologischen Sammlung des Basler Museums. Schweighauserische Buchdruckerei, Basel.
- Muñoz, A., R. Martinez, and P. Hernandez. 1996. Anfíbios y reptiles de la Reserva El Ocote, p. 81–147. *In* M. Vazquez and I. March (eds.),

- Conservación y Desarrollo Sostenible en la Selva El Ocote. ECOSUR-CONABIO, San Cristobal de las Casas, Chiapas.
- Neill, W.T. 1961 ("1960"). Nature and man in British Honduras. *Maryland Nat.* 30:2–14.
- Obst, F.J., K. Richter, and U. Jacob. 1988. The Completely Illustrated Atlas of Reptiles and Amphibians for the Terrarium. T.F.H. Publ., Inc., Neptune City, New Jersey.
- Olson, R.E., B. Marx, and R. Rome. 1986. Descriptive dentition morphology of lizards of Middle and North America, I: Scinidae, Teiidae, and Helodermatidae. *Bull. Maryland Herpetol. Soc.* 22:97–124.
- , —, and —. 1987. Descriptive dentition morphology of lizards of Middle and North America II: Iguanidae. *Bull. Maryland Herpetol. Soc.* 23:12–34.
- Pelcastre Villafuerte, L. and O.A. Flores-Villela. 1992. Lista de especies y localidades de recolecta de la herpetofauna de Veracruz, México. *Publ. Espec. Mus. Zool., Univ. Nac. Autón. México* 4:25–96.
- Pérez-Higareda, G., R.C. Vogt, and O.A. Flores Villela. 1987. Lista anotada de los anfibios y reptiles de la región de Los Tuxtlas, Veracruz. *Estación Biol. Trop. "Los Tuxtlas," Inst. Biol., Univ. Nac. Autón. México, México, D.F.*
- Peters, J.A., and R. Donoso-Barros. 1970. Catalogue of the Neotropical Squamata: part II. Lizards and amphisbaenians. *Bull. U.S. Natl. Mus. Bull.* (297):v–viii + 293 p.
- Peterson, J.A. 1983. The evolution of the subdigital pad in *Anolis*. I. Comparisons among the anoline genera, p. 245–283. *In* A.G.J. Rhodin and K. Miyata (eds.), *Advances in Herpetology and Evolutionary Biology. Essays in Honor of Ernest E. Williams*. Mus. Comp. Zool., Cambridge, Massachusetts.
- Renous-Lécure, S. and R. Jullien. 1972a. Les grands troncs nerveux du zeugopode des lacertiliens (Reptiles, Squamates). *Bull. Mus. Hist. Nat., Paris*, 3^e série, n° 29, Zool. 23:165–206.
- and —. 1972b. Contribution à la connaissance de l'histoire des iguanidés (Reptiles, Squamates) par la confrontation de divers critères: types d'innervation reconnus aus deux membres, présence ou absence de pores fémoraux et préanaux. *Bull. Mus. Hist. Nat., Paris*, 3^e série, n° 29, Zool. 23:253–272.
- Reynolds, S.H. 1913. *The Vertebrate Skeleton*. 2nd ed. Cambridge Univ. Press, Cambridge, Massachusetts.
- Ruiz-Pérez, G.A. 1996. Claves Preliminares para Reconocer a los Reptiles de Nicaragua. Centro de Derecho Ambiental y Promoción Para el Desarrollo, Managua.
- Savage, J.M. 1966. The origins and history of the Central American herpetofauna. *Copeia* 1966:719–766.
- Schmidt, K.P. 1933. New reptiles and amphibians from Honduras. *Field Mus. Nat. Hist. Zool. Ser.* 20:15–22.
- . 1941. The amphibians and reptiles of British Honduras. *Field Mus. Nat. Hist. Zool. Ser.* 22:475–510.
- Schmidt, P. 1928. *Laemantus serratus* (Cope). *Wochenschr. Aquar.-Terrar.* 25(52):5–6.
- Schulte, J.A., II., J.P. Valladares, and A. Larson. 2003. Phylogenetic relationships within Iguanidae inferred using molecular and morphological data and a phylogenetic taxonomy of iguanian lizards. *Herpetologica* 59:399–419.
- Smith, H.M. 1944. Notes on a small collection of reptiles and amphibians from Tabasco, México. *J. Washington Acad. Sci.* 34:154–156.
- and R.B. Smith. 1976. Synopsis of the Herpetofauna of Mexico. Volume III. Source Analysis and Index for Mexican Reptiles. John Johnson, North Bennington, Vermont.
- and —. 1993. Synopsis of the Herpetofauna of Mexico. Volume VII. Bibliographic Addendum IV and Index, Bibliographic Addenda II–IV 1979–1991. Univ. Press Colorado, Niwot.
- and E.H. Taylor. 1950. An annotated checklist and key to the reptiles of Mexico exclusive of the snakes. *Bull. U.S. Natl. Mus.* (199):v + 253 p.
- Snider, A.T. and J.K. Bowler. 1992. Longevity of reptiles and amphibians in North American collections. 2nd ed. SSAR Herpetol. Circ. (21):iii + 40 p.
- Stafford, P.J. 1994. Amphibians and reptiles of the Upper Raspaculo River Basin, Maya Mountains, Belize. *British Herpetol. Soc. Bull.* (47):23–29.
- and E.P. Mallory. 2002. Egg-laying habits of the Middle American arboreal lizard *Laemantus longipes*, with particular reference to nest site selection. *Herpetol. Bull.* 79:30–32.
- and J.R. Meyer. 1999 ("2000"). A Guide to the Reptiles of Belize. Academic Press, San Diego.
- Stolk, A. 1979. Merkwaaardig gedrag bij de Helmleguaan: *Laemantus longipes deborrei*. *Het. Aquar.* 50:131–132.
- Stuart, L.C. 1948. The amphibians and reptiles of Alta Verapaz Guatemala. *Misc. Publ. Mus. Zool., Univ. Michigan* (69):1–109.
- . 1950. A geographic study of the herpetofauna of Alta Verapaz, Guatemala. *Contrib. Lab. Vert. Biol., Univ. Michigan* (45):1–77, pls. I–IX.
- . 1958. A study of the herpetofauna of the Uaxactún-Tikal area of northern El Petén, Guatemala. *Contrib. Lab. Vert. Biol., Univ. Michigan* (75):1–30.
- . 1963. A checklist of the herpetofauna of Guatemala. *Misc. Publ. Mus. Zool., Univ. Michigan* 122:1–150.
- Vaillant, L. 1896. Note sur les changements de coloration observés par M. Antoine Dugès sur le *Laemantus longipes*. *Bull. Mus. Hist. Nat., Paris* 2:318–319.
- Villa, J. 1971. Notes on some Nicaraguan reptiles. *J. Herpetol.* 5:45–48.
- , L.D. Wilson, and J.D. Johnson. 1988. Middle American Herpetology. A Bibliographic Checklist. Univ. Missouri Press, Columbia.
- Vogt, R.C., J.-L. Villarreal Benítez, and G. Pérez-Higareda. 1997. Lista anotada de anfibios y reptiles, p. 507–522. *In* E. González Soriano, R. Dirzo and R.C. Vogt (eds.), *Historia Natural de Los Tuxtlas*. Univ. Nac. Autón. México, México, D.F.
- Weber, W.A. 1945. Wildlife of Tabasco and Veracruz. *Natl. Geogr. Mag.* 87:187–216, pls. I–XVI.
- Werner, F. 1903. Ueber Reptilien und Batrachier aus Guatemala und China in der zoologischen Staats-Sammlung in München nebst einem Anhang über seltene Formen aus anderen Gegenden. *Abhandl. Königl. Bayer. Akad. Wissensch.* (2)22:343–384.
- Wever, E.G. 1978. *The Reptile Ear. Its Structure and Function*. Princeton Univ. Press, Princeton, New Jersey.
- Wiegmann, A.F.A. 1834. *Herpetologia Mexicana, seu descriptio Amphibiorum Novae Hispaniae, quae Itineribus comitis de Sack, Ferdinandi Deppe et Chr. Guil. Schiede in Museum Zoologicum Berolinense Pervenerunt. Pars Prima, Saurorum Species Amplectens. Adiecto systematis Saurorum prodromo, additisque multis in hunc Amphibiorum Ordinem observationibus. Sumptibus C. G. Lüderitz, Berolini.*
- Wilson, L.D. 1983. Update on the list of amphibians and reptiles known from Honduras. *Herpetol. Rev.* 14:125–126.
- and J.R. McCranie. 1994. Second update on the list of amphibians and reptiles known from Honduras. *Herpetol. Rev.* 25:146–150.
- and —. 1998. The biogeography of the herpetofauna of the subhumid forests of Middle America (Isthmus of Tehuantepec to northwestern Costa Rica). *Royal Ontario Mus. Life Sci. Contrib.* (163):1–50.
- and —. 2002. Update on the list of reptiles known from Honduras. *Herpetol. Rev.* 33:90–94.
- and —. 2004. The conservation status of the herpetofauna of Honduras. *Amphib. Reptile Conserv.* 3:6–33.
- , —, and M.R. Espinal. 2001. The ecogeography of the Honduran herpetofauna and the design of biotic reserves, p. 109–155. *In* J.D. Johnson, R.G. Webb, and O.A. Flores-Villela (eds.), *Mesoamerican Herpetology: Systematics, Zoogeography, and Conservation*. Centennial Mus. Univ. Texas-El Paso, Spec. Publ. (1):iv + 200 p.
- Wynne, R.H. 1981. *Lizards in Captivity*. T.F.H. Publ., Inc., Neptune, New Jersey.
- Zug, G.R. 1971. The distribution and patterns of the major arteries of the iguanids and comments on the intergeneric relationships of iguanids (Reptilia: Lacertilia). *Smithsonian Contrib. Zool.* (83):1–23.

JAMES R. MCCRANIE, 10770 SW 164th Street, Miami, FL 33157–2933, USA (jmccrani@bellsouth.net) and **GUNTHER KÖHLER**, Forschungsinstitut und Naturmuseum Senckenberg, Senckenberganlage 25, D-60325 Frankfurt a. M., Germany (gkoehler@senckenberg.de).

Primary editor for this account, Andrew H. Price.

Published 30 October 2004 and Copyright © 2004 by the Society for the Study of Amphibians and Reptiles.
